### GENERAL INFORMATION

<110> APPLICANT: Lingappa, Jaisri

Lingappa, Vishwanath

<120> TITLE OF THE INVENTION: HIV Capsid Assembly Associated

Compositions and Method

<130> FILE REFERENCE: UCSF.002.01US

<140> CURRENT APPLICATION NUMBER: 10/040,206

<141> CURRENT FILING DATE: 2002-01-02

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REGISTRATION NUMBER: 32,750

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## COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette

COMPUTER: IBM Compatible

OPERATING SYSTEM: WINDOWS

SOFTWARE: PatentIn version 3.1

### PRIOR APPLICATION DATA:

APPLICATION NUMBER: 09/020,144

FILING DATE: 06-FEB-1998

<160>NUMBER OF SEQUENCES: 6

<170> PatentIn Version 3.0

# <210>INFORMATION FOR SEQ ID NO:1

## SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1610 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (vi) ORIGINAL SOURCE:
  - (C) ISOLATE: DNA coding sequence for HIV capsid protein Pr55

### <400> SEQUENCE DESCRIPTION: SEQ ID NO:1

ATGGGTGCGA	GAGCGTCGGT	ATTAAGCGGG	GGAGAATTAG	ATAAATGGGA	AAAAATTCGG	60
TTAAGGCCAG	GGGGAAAGAA	AAAATATAAG	TTAAAACATA	TAGTATGGĞC	AAGCAGGGAG	120
CTAGAACGAT	TCGCAGTCAA	TCCTGGCCTG	TTAGAAACAT	CAGAAGGCTG	CAGACAAATA	180
TTGGGACAGC	TACAGCCATC	CCTTCAGACA	GGATCAGAAG	AACTTAGATC	TAATATATA	240
ACAGTAGCAA	CCCTCTATTG	TGTACATCAA	AGGATAGATG	TAAAAGACAC	CAAGGAAGCT	300
TTAGAGAAGA	TAGAGGAAGA	GCAAAACAAA	AGTAAGAAAA	AGGCACAGCA	AGCAGCAGCT	360
GCAGCTGGCA	CAGGAAACAG	CAGCCAGGTC	AGCCAAAATT	ACCCTATAGT	GCAGAACCTA	420
CAGGGGCAAA	TGGTACATCA	GGCCATATCA	CCTAGAACTT	TAAATGCATG	GGTAAAAGTA	480
GTAGAAGAAA	AGGCTTTCAG	CCCAGAAGTA	ATACCCATGT	TTTCAGCATT	ATCAGAAGGA	540
GCCACCCCAC	AAGATTTAAA	CACCATGCTA	AACACAGTGG	GGGGACATCA	AGCAGCCATG	600
CAAATGTTAA	AAGAGACTAT	CAATGAGGAA	GCTGCAGAAT	GGGATAGAGT	GCATCCAGTG	660
CATGCAGGGC	CTATTGCACC	AGGCCAAATG	AGAGAACCAA	GGGGAAGTGA	CATAGCAGGA	720
ACTACTAGTA	CCCTTCAGGA	ACAAATAGGA	TGGATGACAA	ATAATCCACC	TATCCCAGTA	780
GGAGAAATCT	ATAAAAGATG	GATAATCCTG	GGATTAAATA	AAATAGTAAG	AATGTATAGC	840
CCTACCAGCA	TTCTGGACAT	AAGACAAGGA	CCAAAGGAAC	CCTTTAGAGA	TTATGTAGAC	900
CGGTTCTATA	AAACTCTAAG	AGCCGAACAA	GCTTCACAGG	ATGTAAAAAA	TTGGATGACA	960
GAAACCTTGT	TGGTCCAAAA	TGCAAACCCA	GATTGTAAGA	CTATTTTAAA	AGCATTGGGA	1020
CCAGCAGCTA	CACTAGAAGA	AATGATGACA	GCATGTCAGG	GAGTGGGGG	ACCCGGCCAT	1080
AAAGCAAGAG	TTTTGGCTGA	AGCCATGAGC	CAAGTAACAA	ATCCAGCTAA	CATAATGATG	1140
CAGAGAGGCA	ATTTTAGGAA	CCAAAGAAAG	ACTGTTAAGT	GTTTCAATTG	TGGCAAAGAA	1200

. (C) ISOLATE: Degenerate oligonucleotide C-terminal peptide sequence of WGHP68

<400> SEQUENCE DESCRIPTION: SEQ ID NO:3

ATGAATTCAC TGGGACTGCG GATAGATTAC TGGTACTGGG GATC 4

<210> INFORMATION FOR SEQ ID NO:4

### SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (vi) ORIGINAL SOURCE:
- (C) ISOLATE: Degenerate oligonucleotide C-terminal peptide sequence of WGHP68

<400> SEQUENCE DESCRIPTION: SEQ ID NO:4

ATGAATTCAC TGGGCTCTGA TAGATTACTG GTACTGGGGA TC 42

<210> SEQ ID NO:5

<211> Length:604

<212> Type: PRT

<213> Organism: Triricum aestivum

<400> Sequence 5

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1 5 10 15

Lys Pro Lys Lys Cys Arg Gln Glu Cys Lys Lys Ser Cys Pro Val Val

20 25 30

Lys Thr Gly Lys Leu Cys Ile Glu Val Ser Pro Val Ala Lys Leu Ala

35 40 45

Phe Ile Ser Glu Glu Leu Cys Ile Gly Cys Gly Ile Cys Val Lys

			•												
	50	•				55					60				
Cys	Pro	Phe	Asp	Ala	Ile	Glu	Ile	Ile	Asn	Leu	Pro	Lys	Asp	Leu	Glu
65					70					75					80
Lys	Asp	Thr	Thr	His	Arg	Tyr	Gly	Pro	Asn	Thr	Phe	Lys	Leu	His	Arg
				85					90					95	
Leu	Pro	Val	Pro	Arg	Pro	Gly	Gln	Val	Leu	Gly	Leu	Val	Gly	Thr	Asn
			100					105					110	)	
Gly	Ile	Gly	Lys	Ser	Thr	Ala	Leu	Lys	Val	Leu	Ala	Gly	Lys	Leu	Lys
		115					120					125	5		
Pro	Asn	Leu	Gly	Arg	Phe	Lys	Asn	Pro	Pro	Asp	Trp	Gln	Glu	Ile	Leu
	130					135					140	)			
Thr	Tyr	Phe	Arg	Gly	Ser	Glu	Leu	Gln	Asn	Tyr	Phe	Thr	Arg	Ile	Leu
145					150					155					160
Glu	Asp	Asn	Leu	Lys	Ala	Ile	Ile	Lys	Pro	Gln	Tyr	Val	Asp	His	Ile
				165					170	)				175	5
Pro	Lys	Ala	Val	Gln	Gly	Asn	Val	Gly	Gln	Val	Leu	Glu	Gln	Lys	Asp
			180					185					190	)	
Glu	Arg	Asp	Met	Lys	Asn	Glu	Leu	Cys	Val	Asp	Leu	Glu	Leu	Asn	Gln
		195					200					205	5		
Val	Ile	Asp	Arg	Asn	Val	Gly	Asp	Leu	Ser	Gly	Gly	Glu	Leu	Gln	Arg
	210					215					220	)			
Phe	Ala	Ile	Ala	Val	Val	Ala	Val	Gln	Ser	Ala	Glu	Ile	Tyr	Met	Phe
225					230					235	•				240
Asp	Glu	Pro	Ser	Ser	Tyr	Leu	Asp	Val	Lys	Gln	Arg	Leu	Lys	Ala	Ala
				245					250					25	
Arg	Val	Ile	Arg	Ser	Leu	Leu	Arg	Ser	Asn	Ser	Tyr	Val	Ile	Val	Val
			260					265					270	)	
Glu	His	Asp	Leu	Ser	Val	Leu	Asp	Tyr	Leu	Ser	Asp	Phe	Ile	Cys	Cys
		275					280					285			
Leu	Tyr	Gly	Lys	Pro	Gly	Ala	Tyr	Gly	Val	Val	Thr	Leu	Pro	Phe	Ser
	290					295					300				
Уal	Arg	Glu	Gly	Ile	Asn	Ile	Phe	Leu	Ala	Gly	Phe	Val	Pro	Thr	Glu
305					310					315					320
Asn	Leu	Arg	Phe	Arg	Asp	Glu	Ser	Leu	Thr	Phe	Lys	Ile	Ala		
				325					330					33	
Gln	Gïu	Ser	Ala	Glu	Glu	Val	Ala	Thr	Tyr	Gln	Arg	Tyr			Pro
			340					345					350		
Thr	Met	Ser	Lys	Thr	Gln	Gly	Asn	Phe	Lys	Leu	Ser	Val	Val	Glu	Gly

Thr Met Glu Gly Thr Glu Val Glu Ile Pro Glu Phe Asn Val Ser Tyr  405			355					360					365	;		
Second	Glu	Phe	Thr	Asp	Ser	Gln	Ile	Val	Val	Met	ïзи	Gly	Glu	Asn	Gly	Thr
385		370					375					380	)			
Thr Met Glu Gly Thr Glu Val Glu Ile Pro Glu Phe Asn Val Ser Tyr  405	Gly	Lys	Thr	Thr	Phe	Ile	Arg	Met	Leu	Ala	Gly	Leu	Leu	Lys	Pro	Asp
Lys       Pro       Gln       Lys       Ile       Ser       Pro       Lys       Phe       Gln       His       Pro       Val       Arg       His       Leu         Leu       His       Ser       Lys       Ile       Arg       Asp       Asp       Tyr       Thr       His       Pro       Val       Arg       His       Leu       Arg       His       Arg       Pro       Leu       Arg       Arg       Thr       Thr       His       Pro       Gln       Phe       Val       Arg       Arg       Arg       Arg       Thr       Thr       His       Pro       Gln       Phe       Val       Arg       Arg       Arg       Arg       Thr       His       Arg       Gln       Phe       Arg       Arg       Arg       His       Arg       Arg       His	385					390					395					400
Lys       Pro       Cln       Lys       Pro       Lys       Phe       Gln       His       Pro       Val       Arg       His       Leu         Leu       His       Ser       Lys       Ile       Arg       Arg       Ser       Tyr       Thr       His       Pro       Gln       Phe       Val       Pro       Cun       Ser       440       Leu       Fro       Hue       Ser       Hue       Arg       Arg       Arg       Fro       Hue       Gln       Ile       Gln       Leu       Met       Arg       Gln       Val       Ala       Leu       Cys       Leu       Ala       Arg       Ile       Tyr       Leu       Ile       Arg       Ile       Lu       Ala       Sur       Lu       Lu       Lu       Lu       Ala       Lu       Ala       Lu       Lu       Lu       Lu       Lu       Lu       Lu	Thr	Met	Glu	Gly	Thr	Glu	Val	Glu	Ile	Pro	Glu	Phe	Asn	Val	Ser	Tyr
Leu His Ser Lys Ile Arg Asp Ser Tyr Thr His Pro Gln Phe Val Ser 445  Asp Val Met Lys Pro Leu Gln Ile Glu Gln Leu Met Asp Gln Glu Val 455  Ile Asn Leu Ser Gly Gly Glu Leu Gln Arg Val Ala Leu Cys Leu Cys 466  Ile Asn Leu Ser Gly Gly Glu Leu Gln Arg Val Ala Leu Cys Leu Cys 486  Leu Gly Lys Pro Ala Asp Ile Tyr Leu Ile Asp Glu Pro Ser Ala Tyr 485  Leu Asp Ser Glu Gln Arg Ile Val Ala Ser Lys Val Ile Lys Arg Phe 500  Ile Leu His Ala Lys Lys Thr Ala Phe Ile Val Glu His Asp Phe Ile 515  Met Ala Thr Tyr Leu Ala Asp Lys Val Ile Val Tyr Glu Gly Leu Ala 530  Ser Ile Asp Cys Thr Ala Asp Ala Pro Gln Ser Leu Val Ser Gly Met 540  Ser Ile Asp Cys Thr Ala Asp Ala Pro Gln Ser Leu Val Ser Gly Met 545  Asp Tyr Arg Pro Arg Ile Asp Lys Leu Glu Ser Thr Lys Asp Pro Thr 565  Tyr Arg Pro Arg Fro Arg Ile Asp Lys Leu Glu Ser Thr Lys Asp Arg Glu					405					410	ı				415	5
Leu His Ser Lys Ile Arg Asp Ser Tyr Thr His Pro Gln Phe Val Ser 435	Lys	Pro	Gln	Lys	Ile	Ser	Pro	Lys	Phe	Gln	His	Pro	Val	Arg	His	Leu
Asp Val Met Lys Pro Leu Gln Ile Glu Gln Leu Met Asp Gln Glu Val  450				420					425					430	)	
Asp Val Met Lys Pro Leu Gln Ile Glu Gln Leu Met Asp Gln Glu Val 450	Leu	His	Ser	Lys	Ile	Arg	Asp	Ser	Tyr	Thr	His	Pro	Gln	Phe	Val	Ser
			435					440					445	5		
Name   Name   Name   Name   Ser   Gly   Gly   Gly   Gly   Leu   Gln   Arg   Val   Ala   Leu   Cys   Leu   Cys	Asp	Val	Met	Lys	Pro	Leu	Gln	Ile	Glu	Gln	Leu	Met	Asp	Gln	Glu	Val
465		450					455					460	)			
Leu Gly Lys Pro Ala Asp Ile Tyr Leu Ile Asp Glu Pro Ser Ala Tyr 485  Leu Asp Ser Glu Gln Arg Ile Val Ala Ser Lys Val Ile Lys Arg Phe 500	Ile	Asn	Leu	Ser	Gly	Gly	Glu	Leu	Gln	Arg	Val	Ala	Leu	Cys	Leu	Cys
485       495       495       495         Leu       Asp       Ser       Glu       Gln       Arg       Ile       Val       Ala       Ser       Lys       Val       Ile       Lys       Arg       Phe         Ile       Leu       His       Ala       Lys       Lys       Thr       Ala       Phe       Ile       Val       Glu       His       Asp       Phe       Ile         Met       Ala       Thr       Tyr       Leu       Ala       Asp       Lys       Val       Ile       Val       Tyr       Glu       Gly       Leu       Ala         Ser       Ile       Asp       Cys       Thr       Ala       Asp       Lys       Val       Ile       Val       Tyr       Glu       Gly       Leu       Ala         Ser       Ile       Asp       Cys       Tyr       Val       Ile       Val       Tyr       Glu       Ser       Gly       Met         Ser       Ile       Asp       Ile       Asp       Ile       Tyr       Phe       Arg       Arg       Arg       Fyr       Ile       Tyr       Fyr       Tyr       Tyr	465					470					475					480
Leu Asp Ser Glu Gln Arg Ile Val Ala Ser Lys Val Ile Lys Arg Phe $500$	Leu	Gly	Lys	Pro	Ala	Asp	Ile	Tyr	Leu	Ile	Asp	Glu	Pro	Ser	Ala	Tyr
Ile Leu His Ala Lys Lys Thr Ala Phe Ile Val Glu His Asp Phe Ile 515    Met Ala Thr Tyr Leu Ala Asp Lys Val Ile Val Tyr Glu Gly Leu Ala 530    Ser Ile Asp Cys Thr Ala Asn Ala Pro Gln Ser Leu Val Ser Gly Met 545    Asn Lys Phe Leu Ser His Leu Asn Lys Lys Leu Glu Ser Thr Lys Asp Arg Glu Glu Tyr Glu Ser Gly Met 575    Asn Tyr Arg Pro Arg Ile Asn Lys Leu Glu Ser Thr Lys Asp Arg Glu					485					490					495	5
The Leu His Ala Lys Lys Thr Ala Phe Ile Val Glu His Asp Phe Ile $515$ Val Tyr Glu Gly Leu Ala $530$ Var Ile Asp Cys Thr Ala Asp Ala Pro Gln Ser Leu Val Ser Gly Met $545$ Var Ile Asp Cys Thr Ala Asn Ala Pro Gln Ser Leu Val Ser Gly Met $545$ Var Var She Leu Ser Fis Leu Asp Ile Thr Phe Arg Arg Asp Pro Thr $565$ Var Arg Arg Ile Asn Lys Pro Arg Arg Arg Glu	Leu	Asp	Ser	Glu	Gln	Arg	Ile	Val	Ala	Ser	Lys	Val	Ile	Lys	Arg	Phe
Met Ala Thr Tyr Leu Ala Asp Lys Val Ile Val Tyr Glu Gly Leu Ala $530$ Ser Ile Asp Cys Thr Ala Asn Ala Pro Gln Ser Leu Val Ser Gly Met $545$ Asn Lys Phe Leu Ser His Leu Asp Ile Thr Phe Arg Arg Asp Pro Thr $565$ Asn Tyr Arg Pro Arg Ile Asn Lys Leu Glu Ser Thr Lys Asp Arg Glu				500					505					510	)	
Met Ala Thr Tyr Leu Ala Asp Lys Val Ile Val Tyr Glu Gly Leu Ala $530$ Ser Ile Asp Cys Thr Ala Asn Ala Pro Gln Ser Leu Val Ser Gly Met $545$ Asn Lys Phe Leu Ser His Leu Asp Ile Thr Phe Arg Arg Asp Pro Thr $565$ Asn Tyr Arg Pro Arg Ile Asn Lys Leu Glu Ser Thr Lys Asp Arg Glu	Ile	Leu	His	Ala	Lys	Lys	Thr	Ala	Phe	Ile	Val	Glu	His	Asp	Phe	Ile
530 $535$ $540$ Ser Ile Asp Cys Thr Ala Asn Ala Pro Gln Ser Leu Val Ser Gly Met $545$ $550$ $555$ $560$ Asn Lys Phe Leu Ser His Leu Asp Ile Thr Phe Arg Arg Asp Pro Thr $565$ $565$ $575$ Asn Tyr Arg Pro Arg Ile Asn Lys Leu Glu Ser Thr Lys Asp Arg Glu			515					520	·				525	5		
Ser Ile Asp Cys Thr Ala Asn Ala Pro Gln Ser Leu Val Ser Gly Met  545  Asn Lys Phe Leu Ser His Leu Asp Ile Thr Phe Arg Arg Asp Pro Thr  565  Asn Tyr Arg Pro Arg Ile Asn Lys Leu Glu Ser Thr Lys Asp Arg Glu	Met	Ala	Thr	Tyr	Leu	Ala	Asp	Lys	Val	Ile	Val	Tyr	Glu	Gly	Leu	Ala
545 550 555 560  Asn Lys Phe Leu Ser His Leu Asp Ile Thr Phe Arg Arg Asp Pro Thr  565 570 575  Asn Tyr Arg Pro Arg Ile Asn Lys Leu Glu Ser Thr Lys Asp Arg Glu		530					535					540	l			
Asn Lys Phe Leu Ser His Leu Asp Ile Thr Phe Arg Arg Asp Pro Thr  565  570  575  Asn Tyr Arg Pro Arg Ile Asn Lys Leu Glu Ser Thr Lys Asp Arg Glu	Ser	Ile	Asp	Cys	Thr	Ala	Asn	Ala	Pro	Gln	Ser	Leu	Val	Ser	Gly	Met
565 570 575 Asn Tyr Arg Pro Arg Ile Asn Lys Leu Glu Ser Thr Lys Asp Arg Glu	545					550					555					560
Asn Tyr Arg Pro Arg Ile Asn Lys Leu Glu Ser Thr Lys Asp Arg Glu	Asn	Lys	Phe	Leu	Ser	His	Leu	Asp	Ile	Thr	Phe	Arg	Arg	Asp	Pro	Thr
					565					570					575	5
580 585 590	Asn	Tyr	Arg	Pro	Arg	Ile	Asn	Lys	Leu	Glu	Ser	Thr	Lys	Asp	Arg	Glu
				580					585					590	)	
Gln Lys Asn Ala Gly Ser Tyr Tyr Leu Asp Asp	Gln	Lys	Asn	Ala	Gly	Ser	Tyr	Tyr	Tyr	Leu	Asp	Asp				
595 600			595					600								

<210> SEQ ID NO:6

<211> LENGTH: 599

<212> TYPE: PRT

<213> ORGANISM: Homo sapians

<400> SEQUENCE 6

Met	: Ala	Asp	Lys	Leu	Thr	Arg	Ile	Ala	Ile	Val	Asn	His	Asp	Lys	Cys
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Lys	Pro	Lys	Lys	Cys	Arg	Gln	Glu	Cys	Lys	Lys	Ser	Cys	Pro	Val	Val
			20					25					30		
Arg	g Met	Gly	Lys	Leu	Cys	Ile	Glu	Val	Thr	Pro	Gln	Ser	Lys	Ile	Ala
		35					40					45			
Tr	Ile	Ser	Glu	Thr	Leu	Cys	Ile	Gly	Cys	Gly	Ile	Cys	Ile	Lys	Lys
	50					55					60				
Cys	Pro	Phe	Gly	Ala	Leu	Ser	Ile	Val	Asn	Leu	Pro	Ser	Asn	Leu	Glu
65					70					75					80
Lys	Glu	Thr	Thr	His	Arg	Tyr	Cys	Ala	Asn	Ala	Phe	Lys	Leu	His	Arg
				85					90					95	
Let	ı Pro	Ile	Pro	Arg	Pro	Gly	Glu	Val	Leu	Gly	Leu	Val	Gly	Thr	Asn
			100					105					110	)	
Gly	, Ile	Gly	Lys	Ser	Ala	Ala	Leu	Lys	Ile	Leu	Ala	Gly	Lys	Gln	Lys
		115					120					125	5		
Pro	) Asn	Leu	Gly	Lys	Tyr	Asp	Asp	Pro	Pro	Asp	Trp	Gln	Glu	Ile	Leu
	130					135					140	)			
Thr	Tyr	Phe	Arg	Gly	Ser	Glu	Leu	Gln	Asn	Tyr	Phe	Thr	Lys	Ile	Leu
145	,				150					155	ı				160
	Asp	Asp	Leu	Lys		Ile	Ile	Lys	Pro			Val	Ala	Arg	
		Asp	Leu	Lys 165		Ile	Ile	Lys	Pro 170	Gln		Val	Ala	Arg 175	Phe
Glu		_		165	Ala			_	170	Gln	Tyr			175	Phe
Glu	. Asp	_		165	Ala			_	170 Ser	Gln	Tyr			175 Lys	Phe
Glu	. Asp	Leu	Ala 180	165 Lys	Ala Gly	Thr	Val	Gly 185	170 Ser	Gln Ile	Tyr Leu	Asp	Arg	175 Lys	Phe Asp
Glu	ı Asp	Leu	Ala 180	165 Lys	Ala Gly	Thr	Val	Gly 185 Cys	170 Ser	Gln Ile	Tyr Leu	Asp	Arg 190 Leu	175 Lys	Phe Asp
Glu Leu Glu	ı Asp	Leu Lys 195	Ala 180 Thr	165 Lys Gln	Ala Gly Ala	Thr	Val Val 200	Gly 185 Cys	170 Ser Gln	Gln Ile Gln	Tyr Leu Leu	Asp Asp 205	Arg 190 Leu	175 Lys Thr	Phe Asp His
Glu Leu Glu	Asp Arg	Leu Lys 195	Ala 180 Thr	165 Lys Gln	Ala Gly Ala	Thr	Val Val 200	Gly 185 Cys	170 Ser Gln	Gln Ile Gln	Tyr Leu Leu	Asp Asp 205 Glu	Arg 190 Leu	175 Lys Thr	Phe Asp His
Glu Leu Glu Leu	Asp Arg Thr	Leu Lys 195 Glu	Ala 180 Thr	165 Lys Gln Asn	Ala Gly Ala Val	Thr Ile Glu 215	Val Val 200 Asp	Gly 185 Cys Leu	170 Ser Gln Ser	Gln Ile Gln Gly	Tyr Leu Leu Gly 220	Asp Asp 205 Glu	Arg 190 Leu Leu	175 Lys Thr	Phe Asp His
Glu Leu Glu Leu	Asp Arg Thr Lys 210	Leu Lys 195 Glu	Ala 180 Thr	165 Lys Gln Asn	Ala Gly Ala Val	Thr Ile Glu 215	Val Val 200 Asp	Gly 185 Cys Leu	170 Ser Gln Ser	Gln Ile Gln Gly	Leu Leu Gly 220 Asp	Asp Asp 205 Glu	Arg 190 Leu Leu	175 Lys Thr	Phe Asp His
Glu Leu Phe	Asp Arg Thr Lys 210	Leu Lys 195 Glu Cys	Ala 180 Thr Arg	165 Lys Gln Asn Val	Ala Gly Ala Vai Val 230	Thr Ile Glu 215 Cys	Val Val 200 Asp	Gly 185 Cys Leu Gln	170 Ser Gln Ser Lys	Gln Ile Gln Gly Ala 235	Tyr Leu Leu Gly 220 Asp	Asp 205 Glu Ile	Arg 190 Leu Leu Phe	Lys Thr Gln	Phe Asp His Arg Phe 240
Glu Leu Phe	Asp Arg Thr Lys 210	Leu Lys 195 Glu Cys	Ala 180 Thr Arg	165 Lys Gln Asn Val	Ala Gly Ala Vai Val 230	Thr Ile Glu 215 Cys	Val Val 200 Asp	Gly 185 Cys Leu Gln	170 Ser Gln Ser Lys	Gln Ile Gln Gly Ala 235 Gln	Tyr Leu Leu Gly 220 Asp	Asp 205 Glu Ile	Arg 190 Leu Leu Phe	Lys Thr Gln	Phe Asp His Arg Phe 240 Ala
Glu Leu Phe 225 Asp	Asp Arg Thr Lys 210	Leu Lys 195 Glu Cys	Ala 180 Thr Arg Ala Ser	165 Lys Gln Asn Val Ser 245	Ala Gly Ala Val Val 230 Tyr	Thr Ile Glu 215 Cys Leu	Val 200 Asp Ile Asp	Gly 185 Cys Leu Gln Val	170 Ser Gln Ser Lys	Gln Ile Gln Gly Ala 235 Gln	Leu Leu Gly 220 Asp	Asp 205 Glu Ile Leu	Arg 190 Leu Leu Phe	Lys Thr Gln Met Ala	Phe Asp His Arg Phe 240 Ala
Glu Leu Phe 225 Asp	Asp Arg Thr Lys 210 Ala	Leu Lys 195 Glu Cys	Ala 180 Thr Arg Ala Ser	165 Lys Gln Asn Val Ser 245	Ala Gly Ala Val Val 230 Tyr	Thr Ile Glu 215 Cys Leu	Val 200 Asp Ile Asp	Gly 185 Cys Leu Gln Val	170 Ser Gln Ser Lys 250 Asp	Gln Ile Gln Gly Ala 235 Gln	Leu Leu Gly 220 Asp	Asp 205 Glu Ile Leu	Arg 190 Leu Leu Phe	Lys Thr Gln Met Ala 255	Phe Asp His Arg Phe 240 Ala
Leu Glu Leu Phe 225 Asp	Asp Arg Thr Lys 210 Ala	Leu Lys 195 Glu Cys Pro	Ala 180 Thr Arg Ala Ser Arg 260	165 Lys Gln Asn Val Ser 245 Ser	Ala Gly Ala Vai Val 230 Tyr	Thr Ile Glu 215 Cys Leu Ile	Val 200 Asp Ile Asp	Gly 185 Cys Leu Gln Val Pro 265	170 Ser Gln Ser Lys 250 Asp	Gln Ile Gln Gly Ala 235 Gln	Leu Leu Gly 220 Asp Arg	Asp 205 Glu Ile Leu Ile	Arg 190 Leu Leu Phe Lys Ile 270	Thr Gln Met Ala 255	Phe Asp His Arg Phe 240 Ala Val
Leu Glu Leu Phe 225 Asp	Asp Arg Thr Lys 210 Ala Glu	Leu Lys 195 Glu Cys Pro	Ala 180 Thr Arg Ala Ser Arg 260	165 Lys Gln Asn Val Ser 245 Ser	Ala Gly Ala Vai Val 230 Tyr	Thr Ile Glu 215 Cys Leu Ile	Val 200 Asp Ile Asp	Gly 185 Cys Leu Gln Val Pro 265 Tyr	170 Ser Gln Ser Lys 250 Asp	Gln Ile Gln Gly Ala 235 Gln	Leu Leu Gly 220 Asp Arg	Asp 205 Glu Ile Leu Ile	Arg 190 Leu Leu Phe Lys Ile 270 Ile	Thr Gln Met Ala 255	Phe Asp His Arg Phe 240 Ala Val
Lever Phere 225 Asp	Asp Arg Thr Lys 210 Ala Glu	Leu Lys 195 Glu Cys Pro Ile Asp 275	Ala 180 Thr Arg Ala Ser Arg 260 Leu	165 Lys Gln Asn Val Ser 245 Ser	Ala Gly Ala Vai Val 230 Tyr Leu Val	Thr Ile Glu 215 Cys Leu Ile	Val 200 Asp Ile Asp Asn Asp	Gly 185 Cys Leu Gln Val Pro 265 Tyr	170 Ser Gln Ser Lys 250 Asp	Gln Ile Gln Gly Ala 235 Gln Arg Ser	Leu Leu Gly 220 Asp Arg Tyr	Asp 205 Glu Ile Leu Ile Phe 285	Arg 190 Leu Leu Phe Lys Ile 270 Ile	Lys Thr Gln Met Ala 255 Val	Phe Asp His Arg Phe 240 Ala Val

Val	Arg.	Gru	Gry	116	MOII	116	FILE	Deu	АЗР	Q T y	TYL	vai	FIO	1111	Gra
305					310					215	5				320
Asn	Leu	Arg	Phe	Arg	Asp	Ala	Ser	Leu	Val	Phe	Lys	Val	Ala	Glu	Thr
				325					330	)				335	5
Ala	Asn	Glu	Glu	Glu	Val	Lys	Lys	Met	Cys	Met	Tyr	Lys	Tyr	Pro	Gly
			340					345					350	)	
Met	Lys	Lys	Lys	Met	Gly	Glu	Phe	Glu	Leu	Ala	Ile	Val	Ala	Gly	Glu
		355					360					365	5		
Phe	Thr	Asp	Ser	Glu	Ile	Met	Val	Met	Leu	Gly	Glu	Asn	Gly	Thr	Gly
	370					375					380	)			
Lys	Thr	Thr	Phe	Ile	Arg	Met	Leu	Ala	Gly	Arg	Leu	Lys	Pro	Asp	Glu
385					390					395	5				400
Gly	Gly	Glu	Val	Pro	Val	Leu	Asn	Val	Ser	Tyr	Lys	Pro	Gln	Lys	Ile
				405					410	)				415	5
Ser	Pro	Lys	Ser	Thr	Gly	Ser	Val	Arg	Gln	Leu	Leu	His	Glu	Lys	Ile
			420					425					430	) 1	-
Arg	Asp	Ala	Tyr	Thr	His	Pro	Gln	Phe	Val	Thr	Asp	Val	Met	Lys	Pro
		435					440					445	5		
Leu	Gln	Ile	Glu	Asn	Ile	Ile	Asp	Gln	Glu	Val	Gln	Thr	Leu	Ser	Gly
	450					455					460	)			
Gly	Glu	Leu	Gln	Arg	Val	Arg	Leu	Arg	Leu	Cys	Leu	Gly	Lys	Pro	Ala
465					470					475	;				480
Asp	Val	Tyr	Leu	Ile	Asp	Glu	Pro	Ser	Ala	Tyr	Leu	Asp	Ser	Glu	Gln
				485					490					495	5
Arg	Leu	Met	Ala	Ala	Arg	Val	Val	Lys	Arg	Phe	Ile	Leu	His	Ala	Ļys
			500					505					510		
Lys	Thr	Ala	Phe	Val	Val	Glu	His	Asp	Phe	Ile	Met	Ala	Thr	Tyr	Leu
		515	•				520					525			
Ala	Asp	Arg	Val	Ile	Val	Phe	Asp	Gly	Val	Pro	Ser	Lys	Asn	Thr	Val
	530					535					540	)			
Ala	Asn	Ser	Pro	Gln	Thr	Leu	Leu	Ala	Gly	Met	Asn	Lys	Phe	Leu	Ser
545					550					555	i				560
Gln	Leu	Glu	Ile	Thr	Phe	Arg	Arg	Asp	Pro	Asn	Asn	Tyr	Arg	Pro	Arg
				565					570					579	
Ile	Asn	Lys	Leu	Asn	Ser	Ile	Lys	Asp	Val	Glu	Gln	Lys	Lys	Ser	Gly
			580					585					590	)	
Asn	Tvr	Phe	Phe	Leu	Asp	asa									